WHAT IS CLAIMED IS:

1. An electronically controlled hydraulic brake system, comprising:

a pressure increasing pump which increases a brake hydraulic pressure in a brake hydraulic line;

a motor connected to the pressure increasing pump, the motor being controlled on the basis of a motor drive current command value to bring the brake hydraulic pressure to a target brake hydraulic pressure;

a pressure detector which detects an actual hydraulic pressure in the brake hydraulic line; and

a controller connected to the motor and the pressure detector, the controller being arranged

to calculate an attainment brake hydraulic pressure, which is a maximum brake hydraulic pressure attained when the motor operates in response to a motor drive current command value,

to obtain a linear compensation executed attainment brake hydraulic pressure by linearly compensating the attainment brake hydraulic pressure using the actual brake hydraulic pressure,

to obtain a linear compensation executed motor drive current command value by executing an inverse calculation of the calculation for obtaining the linear compensation executed attainment brake hydraulic pressure on the basis of the linear compensation executed attainment brake hydraulic pressure, and

to control the motor based on the linear compensation executed motor drive current command value.

2. The electronically controlled hydraulic brake system as claimed in claim 1, wherein the controller is further

arranged to set a virtual initial pressure estimated as an initial value of the brake hydraulic pressure, and to obtain the linear compensation executed attainment brake hydraulic pressure by adding the actual brake hydraulic pressure to a value obtained by subtracting the virtual initial pressure from the attainment brake hydraulic pressure.

3. The electronically controlled hydraulic brake system as claimed in claim 2, wherein the controller is further arranged to obtain an ideal flow rate of brake fluid by the pressure increasing pump, and to obtain the linear compensation executed attainment brake hydraulic pressure from the ideal flow rate and the actual brake hydraulic pressure.

4. The electronically controlled hydraulic brake system as claimed in claim 3, wherein the controller is further arranged to obtain the ideal flow rate using a flow rate equation based on fluid dynamics and to obtain the linear compensation executed attainment brake hydraulic pressure by executing an inverse calculation of the flow rate equation.

5. The electronically controlled hydraulic brake system as claimed in claim 4, wherein a flow rate coefficient in the flow rate equation is a fixed value.

6. The electronically controlled hydraulic brake system as claimed in claim 4, wherein a flow rate coefficient in the flow rate equation is a variable which is varied according to an unattained pressure between a control

start brake hydraulic pressure and a control finish brake hydraulic pressure.

7. The electronically controlled hydraulic brake system as claimed in claim 1, further comprising a pressure decreasing valve which is disposed in the brake hydraulic line and is connected to the controller, the controller controls the pressure decreasing valve to decrease the actual brake hydraulic pressure.

8. The electronically controlled hydraulic brake system as claimed in claim 7, wherein the controller controls the motor when the actual brake hydraulic pressure is to be increased, and controls the pressure decreasing valve when the actual brake hydraulic pressure is to be decreased.

9. An electronically controlled hydraulic brake system which electronically controls a brake hydraulic pressure in a brake hydraulic line for a vehicle by outputting a motor drive current command value to a motor of a pressure increasing pump for increasing the brake hydraulic pressure, the electronically controlled hydraulic brake system comprising:

a controller arranged to execute a linear compensation of a maximum brake hydraulic pressure attained when the motor operates in response to a motor drive current command value, and to obtain the motor drive current command value by executing an inverse calculation of the calculation for obtaining the linear compensation executed maximum brake hydraulic pressure.

10. A method of electronically controlling a brake hydraulic pressure in a brake hydraulic line through a control of a motor of a pressure increasing pump which increases the brake hydraulic pressure, the method comprising:

calculating an attainment brake hydraulic pressure, which is a maximum brake hydraulic pressure attained when a motor of a pressure increasing pump operates in response to a motor drive current command value;

obtaining a linear compensation executed attainment brake hydraulic pressure by linearly compensating the attainment brake hydraulic pressure using an actually detected brake hydraulic pressure in the brake hydraulic line;

obtaining a linear compensation executed motor drive current command value by executing an inverse calculation of the calculation for obtaining the linear compensation executed attainment brake hydraulic pressure on the basis of the linear compensation executed attainment brake hydraulic pressure, and

controlling the motor based on the linear compensation executed motor drive current command value.

11. An electronically controlled hydraulic brake system which controls a motor of a pressure increasing pump on the basis of a motor drive current command value obtained from a target brake hydraulic pressure to bring the brake hydraulic pressure to the target brake hydraulic pressure, the electronically controlled hydraulic brake system comprising:

attainment brake hydraulic pressure calculating means for calculating an attainment brake hydraulic

pressure, which is a maximum brake hydraulic pressure attained when the motor drive current command value is applied to the motor;

attainment brake hydraulic pressure compensating means for obtaining a linear compensation executed attainment brake hydraulic pressure by linearly compensating the attainment brake hydraulic pressure using an actual brake hydraulic pressure;

linear compensation executed motor drive current command value calculating means for obtaining a linear compensation executed motor drive current command value by executing an inverse calculation of the calculation executed at the attainment brake hydraulic pressure compensating means on the basis of the linear compensation executed attainment brake hydraulic pressure; and

control means for controlling the motor based on the linear compensation executed motor drive current command value.